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ABSTRACT

An observation guide for the identification of intellectually advanced preschool children was developed by adapting characteristics illustrated in the literature for older children. The 46 descriptive characteristics included in the guide were categorized in terms of three general sets: general ability, task commitment, and creativity. Teachers using the guide evaluated 249 young children in 11 classes at 5 preschool centers. Later, 36 children selected from the sample were reevaluated. After using the guide, participating teachers evaluated both the guide and accompanying instructions. Analysis of data indicated the following: (1) Teachers felt the observation guide's rating instrument provided new insight into what constitutes intellectual advancement in preschoolers. (2) The observation guide was found to have high internal consistency as noted by the reliability of the scores in the three categories. (3) Intellectual advancement scores were not sex- or age-related. (4) Significant differences between classes in all categories and between centers in an intellectual subcategory were found. No significant differences were found between centers in a socioemotional-moral subcategory or in task commitment and creativity categories. (5) With regard to external reliability, evaluation-reevaluation scores showed a low positive correlation. (6) A minimum cutoff score of 88 may be used to identify a large proportion of truly intellectually advanced preschool children. (Author/RH)

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IDENTIFYING INTELLECTUAL ADVANCEMENT IN PRESCHOOLERS

Fannie M. Hoeksema

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A thesis submitted in partial fulfillment of
the requirements for the degree of
Specialist in Education

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August 1982

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Accepted by the Faculty of the School of Graduate Studies, Central Michigan University, in partial fulfillment of the requirements for the Specialist in Education Degree

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Fannie M. Hoeksema

ABSTRACT

IDENTIFYING INTELLECTUAL
ADVANCEMENT IN
PRESCHOOLERS

by Fannie M. Hoeksema

An Observation Guide for the Identification of Intellectually Advanced Preschoolers was developed by adapting appropriate characteristics as illustrated in the literature for older children. The instrument had 46 characteristics descriptive of intellectual advancement. These characteristics were listed under general ability, task commitment, and creativity categories.

Teachers were provided basic instruction and a set of instructions for use of the observation guide prior to using the instrument. They evaluated 249 young children in 11 classes at five preschool centers using the instrument. Thirty-six children selected from the population were later reevaluated.

Comments were provided by the participating teachers to evaluate the observation guide and the instructions for its use. Score data collected during the use of the instrument were used for analytical purposes.

Analysis of study data indicated that:

1. Teachers felt the observation guide rating instrument provided new insight into what constitutes intellectual advancement in preschoolers.

2. The observation guide was found to have high internal consistency as noted by the reliability of the scores in the instrument areas.

3. Intellectual advancement scores were not sex or age related.

4. Significant differences between classes in all categories and between centers in an intellectual subcategory were found. No significant differences were found between centers in a socio-emotional-moral subcategory or task commitment and creativity categories.

5. Evaluation-reevaluation scores showed a low, positive, correlation as a measure of instrument external reliability.

6. A minimum cutoff score of 88 obtained using the observation guide may be used to identify a large proportion of true intellectually advanced preschoolers.

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CHAPTER I

INTRODUCTION

Background of the Problem

"In a society dedicated in the idea that each person should attain the heights of which he is capable, those capable of the greatest intellectual attainments frequently have not been helped to scale those heights" (Durr, 1964, p. 3). Many factors work to the disadvantage of the gifted. Professional awareness, writing, and research have focused on the physically, emotionally and intellectually handicapped beginning with the infant and the very young child. Not only has money been channeled into programs designed to help the handicapped help themselves, but at the same time it was commonly believed that the most able could take care of themselves under any circumstance.

As a result of this opinion the gifted and talented were often neglected by the educational community. Teachers tended to devote their attention and energies to the less able and the backward students. Views regarding the gifted and talented have changed considerably. Increasing attention is being given to the needs of these children.

Need for Identification

Gifted and talented students could be considered as one of the most neglected groups in our schools today. The

gifted and talented are potentially one of our greatest resources. Intellectual advancement is one aspect of giftedness. By identifying this advancement at an early age it would seem that this potential could be most advantageously developed and utilized. This is particularly important if one assumes that a young child's intelligence grows as much in the first four years of life as it will in the next thirteen.

Hollingworth (1920) believed early identification was necessary because early childhood experience played a significant role in determining the degree of potential realized. She stated that, " . . . a mind must be judged by its product" (p. 26) and pointed out that this was evidenced in the life of Benjamin Franklin, a known gifted adult. His life demonstrated the result of an early awareness and guidance by parents and other adults long before he entered school.

Strang (1958) pointed out that giftedness is a progressive development from birth to maturity. The lack of an opportunity to develop in an intellectually stimulating environment and the limited opportunity for social relationships car restrict or prevent the orderly development of giftedness to its highest degree. Witty (1958) suggested that early identification of giftedness includes the years before school entry. He felt recent studies suggested an important relationship between early identification and

parental understanding of the gifted young child to the later development of gifted potential. In his studies of gifted children who do not succeed in school, and children who did not utilize the gifts they possessed, he found two factors of unusual significance. "The first is associated with failure of the home and school to offer challenging educational opportunities and stimulation. The second is lack of pupil interest" (p. 48). Although most research evidence deals with gifted school-age children there is no reason to suspect the results cannot be applied to preschool children.

Robinson, Roedell, and Jackson (1979) believed early identification and intervention programs for intellectually advanced preschool children are " . . . necessary to encourage successful learning experiences . . . " and " . . . can serve two general purposes: They provide guidance and planning aid to parents and they can provide a supportive educational environment for (preschool) children" (p. 149-150).

In the present system of public education attention is focused on the gifted child after entry into school. With the growing popularity of public and private preschool and child care facilities the intellectually gifted preschooler is becoming more visible. As a result the preschool educator asks, "How do I verify my suspicions about giftedness

so I can help the gifted child and parents understand and maximize available intellectual potential?"

Identifcation of intellectually gifted preschoolers will provide guidelines for the teacher to develop a stimulating program. Successful learning experiences can provide an optimal match between a child's developmental level and the demands of material presented. This educational stimulation may prevent the loss of interest through frustration and boredom by the time a preschooler enters kindergarten.

Techniques of Identification

The intellectually gifted school-age child often is not easy to identify. The procedure is even more difficult with preschoolers. In highly developed gifted programs for school-age children, less than half of the expected number of gifted individuals have been identified. (Martinson, 1974) It is possible to err in the positive identification of gifted children. The misidentification of the gifted child is potentially more serious than the misclassification of one not gifted. This is especially true when supplementary guidance is available to enhance the available potential.

Multifaceted and varied techniques are used for the identification of intellectually gifted children after entry into a formal school system at age five or six.

These techniques include intelligence tests, achievement tests, school performance, teacher judgement and parental interview. Research concludes these techniques are acceptable to assist in the identification of gifted school-age children, but are not equally acceptable for use in the identification of potentially advanced pre-school-age children. Indications are that observation of known gifted characteristics may be a more valid technique in the initial identification procedure of intellectually gifted preschoolers. (Robinson et al., 1979)

The intelligence test can be used in a group or on an individual basis for identification of intellectually advanced kindergarten-age children, and older. Martinson (1974) noted that certain problems are evident when group tests are administered to older school-age children. The content is designed for the majority of pupils within certain age and grade ranges and only a few items are included which would be suitable for testing giftedness. A limited number of advanced items can result in a possible variance of 30 points between a group test score and an individual intelligence test score.

There is also a large variance between scores achieved by one person on two different IQ tests. The results could place the student in or out of the gifted population on the basis of predetermined cutoff scores. A study by Pegnato, reported by Martinson (1974),

illustrated discrepancies between scores on the Otis Group Test and the Binet given to a group of junior high students. If a cutoff score of 125 on the Otis has been used " . . . over half of the gifted in his study would have failed to qualify, including some whose actual scores on the Binet ranged from 146-161" (p. 41). Out of the 84 in the gifted group, 45 had Binet scores 20 or more points higher than their Otis scores. Fifteen in the gifted group scored at least 30 points lower on the Binet than on the Otis. Martinson (1974) noted that Walton, a kindergarten teacher of known gifted children, found that 10% of her pupils received scores below 110 on a group IQ test.

Seagoe (1975) reported that the reason Terman eliminated children third grade and under from his identification program was that he found it too difficult to use group tests effectively and teachers did not know enough about characteristics of giftedness for the identification of gifted young children. Bayley (1955) found it difficult, if not impossible, to achieve a valid score on an individual intelligence test for children less than five years old. She felt research " . . . gives little hope of ever being able to measure a stable and predictable intellectual factor in the very young . . . " two years and younger. (p. 808) She also found that in general the predictions are a little better in the later preschool ages two to five years, but still questionable.

Bayley (1955) also stated there are still too many unanswered questions about the variety of mental functions, " . . . their interrelationships and the changes that take place in mental organization with growth . . . " in a young child under five years to be able to test for a reliable IQ. (p. 808) She felt " . . . after five or six years, children can be reliably classified into broad categories of normal, defective, and bright" (p. 808). Even though a gifted preschool child could be intellectually advanced as much as two years, a three year old child who is mentally equivalent to a five year old should not be expected to produce reliable scores on an intelligence test. (Robinson et al., 1979)

After administration of the Wechsler Preschool and Primary Scale of Intelligence, and the starred items in the short form of the Stanford-Binet Intelligence Scale among others, to known intellectually gifted preschool children, Robinson et al. (1979) concluded there was " . . . ample evidence that the most comprehensive battery of tests administered by the most skilled of testers may not provide a good estimate of young child's (preschooler's) capabilities" (p. 146). Not only were the intelligence tests found to be ineffective tools for the identification of a potentially gifted preschooler, the achievement test was also believed to be ineffective. (Robinson et al., 1979) It was felt kindergarten readiness tests were

" . . . wholly inadequate for identifying preschool children with advanced abilities. These tests simply do not provide any opportunity for intellectually advanced children to show the extent of what they can do" (p. 145).

School performance in a preschool is not acceptable as a discrimination factor for intellectual giftedness if the criterion test grades, honor roll membership, and other paper-pencil activities are used. School performance as related to level of language development, use of manipulative toys and equipment, and other play choices such as role playing might be used as a criterion, but this type of behavior evaluation would depend on teacher observation, a very subjective evaluation technique.

Preliminary finding of the Seattle Project (Roedell, Jackson, & Robinson, 1980) indicated that the use of a parental interview, with the focus on gifted characteristics, as a technique for the identification of an intellectually gifted preschooler is more efficient than intelligence and achievement tests. Durr (1964) listed several characteristics which parents of possible intellectually advanced preschoolers should be aware of. These same characteristics can be observed by the preschool teacher in a group context.

Martinson (1974) noted that teacher observation is the most widely used, but not necessarily the most

successful technique in the identification process. Part of the problem of teacher identification may be caused by lack of knowledge about gifted characteristics exhibited by children, third grade and younger (Seagoe, 1975), rather than the fault of the technique. Gallagher, as noted by Martinson (1974), felt an organized listing of characteristics on an instrument used by teachers to identify the potentially advanced child, kindergarten and older, could provide valuable inservice training and increase the teacher's awareness of gifted children and their educational needs. In her research, Gear (1978) found the influence of appropriate training increased the accuracy of teacher judgement in the identification of intellectually gifted elementary school children.

DeHaan and Havighurst (1965) noted that teacher observation and judgement is appropriate in the identifying process of gifted children especially in areas where tests are poorly developed. To increase the accuracy of judgement and observation a systematic observational guide is needed. A guide will assist in identifying significant gifted characteristics which are difficult to observe because a child may attempt to hide them or the teacher may not be aware of certain pertinent characteristics which indicate intellectual advancement. They recommended the use of an observational guide to

increase the chances that sensitivity toward intellectual giftedness will be developed by the teacher.

Increased sensitivity will also help the teacher conduct parental interviews. The parent probably knows more about their child than any one else, but this knowledge is often " . . . unsystematized and unevaluated" (p. 57).

A rating scale designed for use with preschool children before entry into kindergarten, could be an important educational tool for the preschool teacher. There are several advantages in using a rating scale for identification purposes. Martinson (1974) stated that, "items based on direct observation are far more reliable than those based on inference" (p. 39).

A rating scale will provide a degree of control on a subjective process. This would be true for parental evaluation and teacher evaluation. Rating scales do not require administration by a test expert. In Michigan, private preschool and day care facilities do not have ready access to trained testers who can give assistance in identifying the potentially gifted preschooler. A rating scale allows children to be evaluated by a familiar person in a familiar location. This could allow a young child to be less nervous and afraid, more relaxed and at ease, probably more cooperative and open. (Robinson et al., 1979) A rating scale designed for preschoolers

facilitates evaluation over extended periods of time. Emerging characteristics exhibited by preschoolers entering different developmental stages would be more easily noted by a teacher. Use over extended periods of time would also identify children who may not maintain an advanced level of development because the rate has slowed to a more average level. Other children who suddenly show advanced characteristics not evident before could also be identified.

Characteristics of Intellectual Giftedness

Studies of known intellectually gifted adults and school-age children, kindergarten and older, indicate a number of common intellectual characteristics which were recalled as having been demonstrated before entry into school. (Durr, 1964; Hollingworth, 1920; Seagoe, 1975; Witty, 1958) Following is a list of some of these characteristics:

1. Learns more quickly with less practice.
2. Uses a larger vocabulary.
3. Shows early interest in books, often teaching self to read.
4. Shows early interest in time as related to calendars, clocks, and other number relationships.
5. Concentrates for longer periods of time.
6. Shows higher level of curiosity about environment.

7. Incessantly asks more intelligent questions.

These characteristics seem to be vague and have missing stated reference comparatives. Information about child development and growth patterns at different ages will allow realistic comparisons in group settings with other children. Fixed comparatives and resulting judgements could underrate low socioeconomic and overrate higher socioeconomic children, particularly on language skills.

Assuming the gifted adult did show certain characteristics before they entered school, it is not known at this time " . . . whether all children who learn to read early and show other gifted characteristics have capacity for remarkable intellectual performance in adulthood" (Robinson et al., 1979, p. 154). Only careful longitudinal research will have the ultimate answer to such a question. While specific characteristics and firm levels of development may elude us the early identification of advancement will help maximize the potential which otherwise will be wasted.

Statement of the Problem

Using accepted developmental characteristics as noted in research literature (Durr, 1964; Hollingworth, 1920; Roedell et al., 1980; Seagoe, 1975), it is planned that a rating scale instrument will be constructed to assist in the identification of intellectually advanced gifted

preschoolers. It is expected that use of the rating scale will provide data to answer several questions.

1. Is the instrument useful for increasing the awareness of accepted intellectually advanced characteristics among preschool educators?

2. Is there a difference between the scores of the centers, classes, and sexes in the areas evaluated?

3. Is there a positive relationship between age and evaluative scores?

4. Is there a positive relationship among the scores of the instrument areas evaluated?

5. Is there a positive relationship between the scores on the instrument areas evaluated over two observations?

6. What value will provide an acceptable minimum selection score for intellectual advancement as found in a preschooler?

Method

The following procedural steps are to be used in developing the study:

1. Characteristics of intellectual advancement will be identified from the literature. This research will be utilized to help establish validity for the identification instrument.

2. Characteristics of intellectual advancement applicable to preschool children will be extrapolated from the available literature and personal experience.

3. A rating scale instrument will be prepared with the selected preschool intellectually advanced characteristics. Content validity will be established using a panel of experts. The judges will include: preschool teacher educator, school psychologist, and a preschool administrator interested in preschool intellectual advancement.

4. Instructions for administration of the instrument will be developed. The instructions will assist preschool teachers in noting the frequency of selected characteristics for intellectual advancement among preschoolers. This is especially critical when many teachers do not know what to expect of intellectually advanced preschoolers. This instrument will be used by teachers to evaluate children with whom they have worked for some time. A training session will be conducted for the teachers prior to their use of the instrument.

5. Participating preschool teachers from five centers will select, as a minimum, all students who are considered average and above or 50 to 60% of class enrollment, whichever provides the greater number of participants.

6. Seven children in each center will be re-evaluated at least one week later.

7. A second interview will be held with the teachers to evaluate the identification instrument.

Definition of Terms

For the purpose of this study, the following terms are defined as they are used in this thesis:

1. "Preschool" means any public or private half day program designed for children with possible entering age of two years six months and up to entry into kindergarten.

2. "Day care" means any program which provides full supervision for young children who need care while parents are absent.

3. "Preschooler" refers to a child with age of two years six months and up to age eligible for kindergarten who may or may not be attending a preschool class.

4. "Gifted" as defined by Renzulli (1979b) " . . . consists of an interaction among three basic clusters of human traits--these clusters being above average general abilities, high

levels of task commitment, and high levels of creativity" (p. 15).

5. "School" specifies the educational community beginning with kindergarten and continuing through 12th grade.

6. "Intellectually advanced" means intellectually "gifted" as noted in definition number 4.

7. "Intellectually gifted child" means " . . . those possessing or capable of developing this composite set of traits (advanced general ability, high level of task commitment and creativity) and applying them to any potentially valuable area of human performance" (Renzulli, 1979b, p. 15).

8. "Creativity" is an ability to see novel relationships, to produce unusual, imaginative, original solutions to a problem, to engage in divergent thinking.

9. "Task commitment" means a focused motivation which represents energy that is brought to bear on a particular problem, task, interest, or specific performance area.

10. "General abilities" describes several areas of abilities which can be measured by tests of intelligence, achievement and/or aptitude.

11. "Instrument area" refers to one of several categories and subcategories for which intellectual advancement scores can be obtained.

CHAPTER II

REVIEW OF LITERATURE

The review of literature deals with definitions of giftedness, techniques of identification, areas of discrimination, characteristics of gifted school children applicable to preschoolers, teacher bias related to giftedness, and guidelines for identification instruments

Definitions of Giftedness

No absolute, universally accepted definition of giftedness exists. Gallagher (1975) stressed that society must recognize that the definition of giftedness is culture-bound. Our society has different economic levels, many ethnic groups, various social levels, a changing value system, and a multigoal educational system. A complex society will have a complex view of what constitutes giftedness. The following definition reflects concern with a variety of dimensions of giftedness and talent which a society or culture values at that time.

> Gifted and talented children are those identified by professional qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to the self and society.
>
> Children capable of high performance include those with demonstrated and/or protential

ability in any of the following areas:

1. General intellectual ability.
2. Specific academic aptitudes.
3. Creative or productive thinking.
4. Leadership ability.
5. Visual and performing arts.
6. Psychomotor ability. (p. 10)

This definition has been adopted by the United States Office of Education and the Michigan Department of Education as the official definition of giftedness.

Renzulli (1979b) pointed out some problems with this definition. "The first problem was failure to include nonintellective (motivational) factors" (p. 14). He felt this conclusion was supported by an overwhelming number of research studies. These included 30 years of follow-up studies on Terman's population of gifted.

A second problem " . . . relates to the non-parallel nature of the six categories included in the definition. Two of the six categories (specific academic aptitude and visual and performing arts) call attention to fields of human endeavor, or general performance areas in which talents and abilities are manifested. The remaining four are more nearly processes that can be thought to bear on the areas of performance. Processes such as creativity and leadership do not exist apart from a performance area to which they can be applied" (p. 14).

A third problem was the misinterpretation and misuse of the definition by practitioners. Renzulli (1979b) felt many people verbally agree with the six USOE categories,

but in practice continue to use relatively high intelligence or aptitude scores as the minimum requirement for entrance into a special program.

Renzulli (1979b) believed research on creative/productive people have shown those who achieve recognition because of their unique accomplishments and creative contributions possess a relatively well-defined set of three interlocking clusters of traits. These interlocking clusters consist of above average though not necessarily superior general ability, task commitment, and creativity. All three will be present and interacting when any creative/productive accomplishment is achieved. Figure 1 illustrates how each is interrelated, necessary, and an equal partner in contributing to giftedness.

Renzulli (1979b) also pointed out that creative accomplishment by productive people is not necessarily a function of measured intelligence. The most productive people are not always those who score at or above the 95th percentile on standardized tests or achieve straight A's. By using only high cutoff scores to select gifted individuals, many with the greatest potential for a high degree of accomplishment would be discriminated against.

A person with above average general ability also needs task commitment. One key characteristic of gifted persons is their ability to be totally involved in specific problems for extended lengths of time. The degree of task commitment

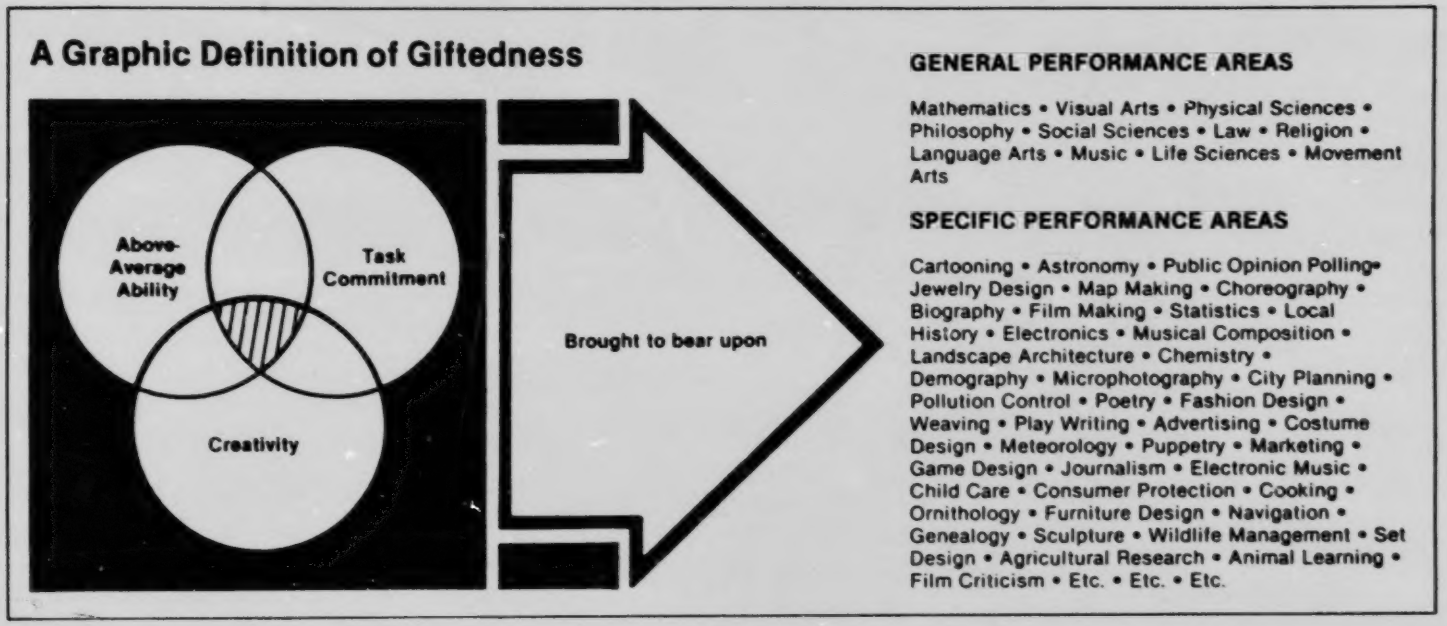
A Graphic Definition of Giftedness
Above-Average Ability
Task Commitment
Creativity
Brought to bear upon
GENERAL PERFORMANCE AREAS
Mathematics • Visual Arts • Physical Sciences • Philosophy • Social Sciences • Law • Religion • Language Arts • Music • Life Sciences • Movement Arts
SPECIFIC PERFORMANCE AREAS
Cartooning • Astronomy • Public Opinion Polling • Jewelry Design • Map Making • Choreography • Biography • Film Making • Statistics • Local History • Electronics • Musical Composition • Landscape Architecture • Chemistry • Demography • Microphotography • City Planning • Pollution Control • Poetry • Fashion Design • Weaving • Play Writing • Advertising • Costume Design • Meteorology • Puppetry • Marketing • Game Design • Journalism • Electronic Music • Child Care • Consumer Protection • Cooking • Ornithology • Furniture Design • Navigation • Genealogy • Sculpture • Wildlife Management • Set Design • Agricultural Research • Animal Learning • Film Criticism • Etc. • Etc. • Etc.

Figure 1. Interacting Features of Creative/Productive Accomplishments. Taken from What makes giftedness: a reexamination of the definition by J. S. Renzulli, Science and Children 16(6):14, March 1979b. Copyright 1978 by Joseph S. Renzulli. Reprinted by permission

is not easily and objectively identified or measured as general cognitive ability. Renzulli (1979a) nevertheless stated it is a " . . . major components of giftedness" (p. 15). A third characteristic of giftedness and one difficult to measure is creativity. Renzulli (1979b) pointed out that divergent thinking is only one factor of creativity. It is questionable whether or not a test for divergent thinking actually measures creativity. Subjectivity enters into the evaluation of giftedness making the process more difficult.

Renzulli (1979a) suggested that the following definition includes these three traits:

> Giftedness consists of an interaction among three basic clusters of human traits--these clusters being above average general abilities, high level of task commitment, and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. (p. 23)

Certainly there can be no hard and fast definition of giftedness. Ambiguous terminology and divergent opinions can handicap the interpretation of research, but can also lead to advantages. Durr (1964) pointed out that lack of a hard and fast definition can benefit the teacher, administrator, or parent in satisfying their particular needs and concerns. Definitions developed in this manner can be altered to fit situations and local populations.

Techniques of Identification

In our culture the "real determiner and real definer of giftedness" (Gallagher, 1975, p. 26) is found in our school settings. No single method will identify 100% of the gifted. A variety of identification techniques will be needed and they will need to be applied over a long period of time. Individual gifts and talents are expressed in a variety of ways. These characteristics of giftedness emerge at different times in life and under certain opportune conditions. The techniques generally used are achievement tests, group and individual intelligence tests, records of past school performance, teacher observations, and parental interviews. All are suitable identifying techniques for use with school-age children, but it appears only some are acceptable for use with preschool children.

Achievement Test and School Performance

In the school environment achievement tests and results from school performance are good indicators of possible giftedness. Teacher test scores, grade point average, and honor roll placement would identify the gifted with drive and good self image. Durr (1964) felt that the gifted underachiever, however, would be overlooked.

These techniques are generally not applicable to the identification of gifted preschool children. If an achievement test was used, developmental aspects could prevent a

reliable score. The physical development of the preschooler could prevent adequate use of paper and pencil. The observed attention span may be long for the chronological age, but not long enough to complete the test. The so-called readiness tests given to kindergarten and first grade children would show only what the gifted preschooler doesn't know rather than providing " . . . opportunity for intellectually advanced children to show the extent of what they can do" (Robinson et al., 1979, p. 145).

Intelligence Tests

Durr (1964) felt that IQ group tests provide a good screening tool and that the individual IQ test is probably the best measure of potential academic achievement. DeHaan and Havighurst (1957) indicated the cutoff IQ score should be between 125 and 160 for "second order gifted children." This score would appear for one out of every 10 of these children. An IQ score between 160 and 200 could appear one out of every 1000 times for "first order gifted children." Martinson and Lessinger (1965) used the IQ score of 130 as the minimum cutoff score. It is counter-productive to set a cutoff too high. An injustice will be done to those with a high degree of task commitment. Taking this into consideration, an IQ of 125 is the minimum score generally accepted for intellectual giftedness.

There are little reported research data on the identification of the intellectually gifted preschool child through IQ tests. Gifted school-age children exhibit characteristics which can be validly tested in group or individually administered achievement and intelligence tests. It has been found, however, that intellectually gifted children under the age of five are generally not reliably evaluated by these kinds of tests.

The nature of intellectual development in a child under the age of five has not yet been accurately identified. Bayley (1955), in the Berkley Growth Study, felt her research " . . . gives little hope of ever being able to measure a stable and predictable intellectual factor in the very young" (p. 807), that is children two years and younger. She did find in general the predictions were a little better at later preschool ages, but still not acceptable. Hollingworth (1920) also found that available techniques of identification are more reliable with older school-age children than with younger preschool children.

Seagoe (1975) stated that Terman found it impractical to attempt identification of gifted children below the third grade because teachers could not decide what the symptoms of intellectual superiority are at that level. In spite of a problem with score reliability when tests are given to children below the third grade, it should be remembered a child with an IQ of 125 at age four or five years is mature

far beyond the chronological age. IQ tests appear to function better in a supporting role rather than in the identification role when used with a preschooler.

Not only is too little known about the early cognitive development of a gifted preschooler, too many other factors enter a test situation. Experience of Robinson et al. (1979) provided evidence that even the most comprehensive battery of tests, administered by the most skillful of testers, may not provide a good estimate of a preschooler's capabilities. A young child's test scores can be depressed through nervousness caused by unfamiliar room, strange tester, lack of interest in test items, more interest in playing own games with material, more interest in conversing with tester about other topics rather than the test items. Because of young age, solving test problems is often farthest from their minds.

Renzulli (1979a) and Witty (1975) believed a test for creativity should also be included in evaluating intellectual development. An intelligence test alone would not successfully identify pupils having high potential for creative expression as indicated by novel relationships, unique solutions to problems, or divergent thinking. The IQ tests do not usually elicit imaginative, original, or unique responses. These authors pointed out it has repeatedly been shown that if the selection of gifted pupils was

limited to those with an IQ score of 130, the majority of creative children would not be included.

Teacher Observation

Identification of the gifted school-age child through observation by teachers has been the least successful identification technique. For some time teacher judgement has been ignored. Presently there is a renewed interest in observation because standard intelligence tests do not measure initiative and originality accurately. Teacher judgement and evaluation are needed for these hard to measure dimensions. Gallagher (1975) felt this is sound especially in search of gifted children from different cultural environments and economic backgrounds.

Teacher judgement is a necessary and valid method to assist in identifying the gifted preschooler. Since so little is known about their intellectual development pattern, a continuous observation over extended periods of time is needed. Beginning levels of intellectual development are not always clearly or immediately apparent. Vocabulary may be advanced for individual chronological ages, but not sufficiently developed for preschooler's to give expression to ideas, observations, and conclusions. The gifted preschooler's expanding environment is still quite limited. Their physical size and development prevents or curtails

the scope of curiosity, interest, and independent investigation seen in older gifted children.

Parental Interview

Based on preliminary findings of the Seattle Project, Robinson et al. (1979) felt there are indications that parental information based on extensive samples of preschool behavior may ultimately give a better estimate of a young child's intellectual competency than a test score. They found parents were reasonably accurate in estimating their children's intellectual abilities.

Durr (1964) suggested questions which parents should ask themselves if they suspect their child is intellectually advanced. This information would be helpful to a teacher or school psychologist when assessing giftedness.

1. Does the child have a mature vocabulary?
2. Does the child understand and use complex sentences?
3. Does the child have a retentive memory?
4. Does the child show unusual interest in number relationships?
5. Does the child demonstrate an interest in books at an early age?
6. Does the child have a wide variety of interests?
7. Does the child evidence an eagerness to learn? (p. 21)

These are relevant and valuable questions for teachers as well as parents. Comparison with other children and knowledge of expected behavior and growth patterns are required for increased value. Durr (1964) suggested parents may need the assistance of the teacher to make this

evaluation for any given age level. If any or all of these characteristics are not observable, it does not mean the child is not gifted. On the other hand presence of all of these characteristics at an early age does not mean the child is gifted.

Characteristics of Giftedness

In childhood, intellectual giftedness generally means greatly advanced development for that particular chronological age. (Gallagher, 1964) To identify children who fit this criterion, the teacher must have a good idea of the normal or average expectation of intellectual performance at a given age level. Judgements must be made as to how far above the norm a particular child performs. Approximately a two year or more advancement has become an acceptable level to indicate giftedness.

The literature provides a list of generally accepted characteristics which constitute observable behavior clues for intellectual giftedness in school-age children. Presence of these characteristics does not always mean the child is gifted, but rather indicates a need for closer observation and further evaluation. These observable characteristics can be placed within Renzulli's (1979b) cluster traits, above average general ability, high level of task commitment, and high level of creativity:

Above average general ability

1. Commonly learn basic skills better, more quickly, with less practice.
2. Early use of large vocabulary.
3. Early interest in books, teaching self to read at early age.
4. Development of wide interest range.
5. Asks many provocative questions.
6. Early interest in time as related to calendars and clocks--yesterday, today, and tomorrow.
7. Early understanding of number concepts and relationships.
8. Keen, alert observer, remembers more of what is seen, heard and read.
9. Performs difficult mental tasks.
10. Relates well to all age groups, prefers to associate with adults and older children.
11. Takes initiative, often is leader in a group.
12. May tend to dominate, organize and direct activities when in group.
13. Early understanding of death.
14. Early differentiation between reality and fantasy.
15. Early interest and understanding of God and the supernatural.
16. Pronounced sense of fairness, honesty, and right.

Task commitment

1. Has ability to concentrate and pay attention for longer periods of time.

2. Early ability to work independently.

3. Has ability to organize, is efficient, is goal oriented.

4. Less subject to peer pressure, less apt to conform, able to adjust to situations and changes.

5. Strives for perfection, critical of self and others.

6. Self-assertive, wants own way, stubbornly set in own ideas.

7. Becomes absorbed in, involved in certain topics or problems to exclusion, for a time, of other interests.

Creativity

1. Are fluent thinkers and talkers, producing large quantities of possibilities, consequences or related ideas to a given situation or "what if" questions.

2. Are flexible thinkers able to use different alternatives and approaches to a problem, ability to improvise with common materials and objects.

3. Are original thinkers, producing new, unusual, unconventional associations from information, ability to see relationships between related and unrelated objects, ideas or facts, not afraid to disagree.

4. Have a high level of curiosity about objects, events, ideas in environment.

5. Displays great deal of imagination, fantasy, sense of humor, intellectual playfulness.

6. Early understanding of cause and effect.

7. Articulate in role playing, story telling.

Areas of Discrimination

Physical Development

Hollingworth (1920) found the intellectually gifted to exhibit slightly better physical patterns of development. Seagoe (1975) pointed out that Terman found these children a little heavier and taller, walked earlier, contacted fewer childhood diseases, and suffered fewer common illnesses. Ironically Terman's own health history questions this conclusion. He suffered so many bouts of T.B. before middle age, it was impossible for him to purchase life insurance until late in life. In spite of this health problem he still thought he was "remarkably healthy" (p. 239).

Seagoe (1975) noted that Terman did find one area of physical development in which the intellectually superior child was below normal. A higher proportion of these children had eye difficulties. This could be caused by a greater amount of early reading, straining small muscles before they were adequately developed, or greater parental awareness of the child's potential problems.

Technical and scientific advancements in the 1970's and 1980's have exerted a great deal of influence on the physical development of all children. Immunization programs have lowered the susceptibility of more children to most childhood diseases. Miracle drugs have reduced the severity of other illnesses. Vitamins and better general

nutrition in homes and schools affect the physical and mental well-being of more children including the impaired and handicapped as well as the normal.

Improved health care and nutrition is available to all social and economic levels. Health clinics and other medical facilities provide greater availability today for early medical care of prospective mothers, affecting more children before birth as well as after.

In 1975 the Seattle Project (Abrams, 1978) showed a slightly better physical developmental pattern among their research group of intellectually gifted preschoolers. It was felt the finding was inconclusive because a non-random group of children was evaluated. They were from educated, white, middle class homes.

Social, Emotional, and Moral Development

Gold (1965) noted in his evaluation of known studies dealing with the level of social development of intellectually gifted children, the play activities of these children appeared more similar than different when compared with children of average intellect. The difference in play activities seemed to be in degree and extent. The gifted child had greater knowledge about games such as puzzles or checkers, preferred games with a score or more complicated rules, and enjoyed competition.

Intellectually gifted children seem to seek out companions who are somewhat older and closer to their intellectual maturity. It is easier to note social differences as exemplified through play of older children than it is of very young children. Intellectually gifted children will tend to play with others of like mental age if the older group will accept them socially. Hollingworth (1920) pointed out that because of physical size and strength a 10 year old will more easily be able to work out an adjustment by seeking older companions with more satisfying play activities than will a child of six or younger.

The advanced intellectual ability of very young children to comprehend comparably more abstract situations than other children of the same chronological age can cause stress in certain social environments. Certain intellectually advanced children may be viewed as tattletales or overly cautious because of their ability to understand the cause--effect relationship and the right--wrong aspects of certain actions taken by less astute peers. According to Hollingworth (1920) young children with an IQ above 130 comprehended situations which ordinary children their age did not understand, but they are too small and helpless to correct the wrongs they see.

In social situations intellectually advanced young children may demonstrate greater ability to recognize causes of a given emotion, express sympathy for others,

appreciate and understand another's emotional response, and show respect for rights of others. They may also cooperate more readily because they are intellectually capable of putting themselves in another's place. Believing that intellectually gifted young children may possess these abilities, Roedell et al. (1980) maintained these children generally show marked discrepancies between intellectual age on one hand and physical, emotional and motor age on the other. Intellectually advanced preschoolers may show advanced social sensitivity, but still need help tying their shoes and washing their ears.

Analysis of this information requires that the intellectual-social gap be kept in perspective. In the Seattle Project (Robinson et al., 1979) it was pointed out that contrary to past authority, intellectual superiority is not reliably inferred from social superiority. Using the California Preschool Competency rating scale, it was found that intellectually advanced children were not necessarily socially advanced, even though these children came from a similar socioeconomic and intellectual environment--mostly white middle income homes with college educated parents. They generally agreed that superiority can exist in either or both areas.

Intellectual Area

Since the 1930's little research dealing with identified characteristics of the intellectually gifted preschool child has been reported. In the identifying process several factors must be kept in mind. It is believed certain characteristics had been exhibited by known intellectually gifted school-age children and adults before entering school. These characteristics must be evaluated in relationship to the average expected developmental level at the chronological age of the preschooler being observed. In the intellectual area, it is assumed certain identifying characteristics are common to all age categories. Since very little is known about the cognitive development of the preschooler, it has not been determined if there are characteristics which can be related exclusively to the preschool child. It is also not known at this time if the advanced development of observed intellectual characteristics in preschool years will always indicate continued intellectual advancement in the school-age and adult years.

Certain characteristics are common to more than one developmental area. Social, emotional, and moral characteristics which are related to intellectual development can be used as factors to help determine presence of intellectual advancement.

Socioeconomic and Educational Levels

It is generally accepted that the socioeconomic and educational levels of the family do influence the achieved intellectual level of, but does not affect the potential level intellectually gifted children could reach. Hollingworth (1920) wrote, "To find most easily and quickly a group of gifted children, one should go to a private school, or a public school in an excellent residential section of the city and ask for children who are young for their classes and whose fathers are professional" (p. 75).

Seagoe (1975) referred to Terman's project in the California Schools which identified intellectually gifted children in every racial group and at all socioeconomic levels. Nearly two-thirds of the children came from homes where the father's occupation was classified as professional, semi-professional, or higher business; less than one percent was unskilled. Research by Havighurst (DeHaan & Havighurst, 1957) demonstrated that children with gifted characteristics have better chances of developing intellectually to a higher degree if they are from the upper, upper middle and lower middle class than from the upper lower and lower lower class. Upon examination of the family and home background of the intellectually gifted preschool children in the Seattle Project (Abrams, 1978) it was found that all came from homes of white, middle income, college-educated parents.

Durr (1971) emphasized that the factor of socioeconomic level will influence, not cause a " . . . difference in the result of studies which attempts to measure similar characteristics . . . " (p. 30) of the intellectually advanced population. Recent scientific and technical advances have tended to blur and confuse formerly obvious and distinct educational and environmental differences between the underprivileged and affluent classes. Increased availability of a good public education, technical advancement of TV, radio, and movies provide mass exposure to new vicarious experiences, superabundance of printed material such as newspapers and magazines, free access to well stocked libraries, comparatively faster and more economical methods of travel are enriching the environment of all socioeconomic and educational levels. If, and to what extent, these factors influence the development of the intellectually gifted young child must yet be determined. DeHaan and Havighurst (1957) reported that families of low socioeconomic stature, especially blacks, minority ethnic groups, rural populations, and girls represent talent areas that have not been fully developed. Although it is easier to identify the gifted in the higher socioeconomic and educational levels, it cannot be concluded that the gifted are not found in the lower socioeconomic and educational levels.

Teacher Bias

Teachers should be aware of certain factors which influence their judgement of possible gifted children. Gallagher (1975) felt there is considerable evidence to show teachers are more likely to overlook the divergent thinking, highly creative child, but more apt to choose the convergent, high IQ child, as gifted.

Heck (1953) listed other factors which also adversely influence teacher judgement:

1. Failure to note average and to rate the child too high
2. Failure to note under-age and then to rate the child too low.
3. Tendency to overrate pupil with bright sparkling eyes and happy face
4. Tendency to underrate the surly, cross troublemaker.
5. Tendency to overrate the child who likes the teacher and does everything possible to help.
6. Tendency to underrate those who obviously dislike the teacher and who do everything in their power to make life miserable for her. (p. 91)

It is reasonable to assume these factors will also influence the judgement of the preschool teacher.

There are several other factors which the preschool teacher must recognize about young children. Preschool attendance is frequently the first exposure to a large group situation. Observable behavior of preschool children takes place in a shorter time span and in busy classrooms certain behaviors may be missed. The existing boundaries of a preschooler's physical environment may

limit their experiences. Misinterpretation of certain preschool behaviors can cause confusion in the evaluation process for intellectual advancement. Some of these behavior characteristics noted by Hollingworth (1920) in preschool children are:

1. Child may appear to be a "loner" because he had no playmates at home so needs to learn social skills or because of intellectual advancement prefers to play with older children who have same interest level.

2. What appears to be impatience could be caused by short attention span or caused by rapid understanding of material being considered by the group.

3. Appearance of hesitancy or fearfulness may be caused by immaturity or advanced intellectual understanding of situation as to results and consequences of certain actions.

4. No interest in fairy tales may be caused by lack of imagination and generally lack of interest in books or by advanced intellectual ability resulting in preference for factually scientific books such as dictionaires, encyclopedias, atlases, detective stores, books on astronomy, and natural phenomena.

5. Child may seek close relationship with teacher because he does not know how to relate to peers or because of intellectual advancement needs to ask questions only the teacher can answer.

Organizing an Identification Program

The definition of giftedness goes beyond those skills and abilities which are measured through achievement, intelligence, and academic attitude. This necessitates the addition of more subjective measurements. Renzulli

(1979a) noted that Sanborn suggested a system for identification of the gifted and talented should take into account as many of the following guidelines as possible:

A. An adequate plan for the identification of gifted and talented individuals requires use of a variety of techniques over a long period of time.

   1. There are many ways in which the gifted and talented may express themselves.

   2. Gifted and talented performances may emerge at certain times in life and under certain opportune conditions.

B. Identification of gifted and talented individuals should be based on knowledge of the individual, the cultural-experiential context in which the individual has developed, and the fields of activity in which he or she performs.

   1. At least some methods of identification should be individualized, yielding case study data unlikely to be obtained by group standardized methods.

   2. Identification techniques can be locally developed with methods and criteria which are appropriate for the particular population to be studied.

   3. The identification process should call for systematic involvement of those professionals who are acquainted with individuals through direct observation of behavior and performances.

   4. The identification process should call for involvement of those persons best qualified to judge the quality of a performance or product. This is especially important in areas such as the visual and performing arts.

   5. The identification process should involve persons best qualified to understand

the culture and specific circumstances of the individuals whose performances are being assessed.

C. Both self-chosen and required performance should be assessed.

D. Considerable freedom of expression of response should be allowed.

E. Adequacy of the identification program should be continuously reassessed.

1. Follow up study should involve both those who were identified as gifted or talented and those who were not.

2. On the basis of evidence obtained, methods and procedures for identification should be modified by refining, adding, and deleting.

3. On the basis of evidence, those individuals who have been misclassified may be reclassified as appropriate

F. Evidence obtained during the identification process should provide a primary basis for programming experiences and opportunities. (pp. 25-26)

Robinson et al. (1979) suggested several guidelines that also need to be considered when developing a system for the identification of preschool children with advanced intellectual abilities:

1. . . . the identification system must include opportunities for children who have extremely advanced skills to display those skills. Bright children may perform like average children unless they are presented with sufficiently challenging material.

2. . . . an identification system must allow for the inconsistency that often characterizes the performance of young children. If a testing session includes a broad range of tasks, it

> is more likely that some items will both capture the child's interest and elicit the best performance of which the child is capable. A useful maxim is to look for evidence of what the child can do, and not be discouraged by what child cannot, or will not do.
>
> 3. Experience in the Seattle Project has provided ample evidence that even the most comprehensive battery of tests administered by the most skillful tester may not provide a good estimate of young child's capabilities . . . a detailed parents' report of child's ability should be included. (pp. 145-146)

Summary

There is no hard and fast definition of giftedness. This can be an advantage when applied to a given situation or population. It allows the development of a program with specific goals pertaining to the identified community.

Renzulli (1979b) and Gallagher (1975) agreed that above average general ability is a necessary component of giftedness. Renzulli (1979b) felt that task commitment and creativity were also important when considering giftedness.

Identification procedures for gifted children are varied. No one method will identify 100% of the gifted population. Achievement tests and school performance are good indicators of possible giftedness of school-age children, but these indicators should not be applied to identify giftedness in preschool children.

The intelligence test is a questionable tool for identifying intellectually gifted preschoolers. An IQ

of 125 is generally accepted as a good cutoff score when it is considered a part of a comprehensive identifying process. Intelligence tests are better indicators of gifted school-age children than of preschool children. Hollingworth (1920), Bayley (1955), and Robinson et al. (1979) found individual intelligence tests administered to preschool children produce questionable results. It is believed not enough is known about the process of intellectual development in gifted preschoolers. Renzulli (1979b) felt IQ tests fail to identify many intellectually gifted because creativity and task commitment are not considered.

Teacher observation and parental interview are two reliable techniques which can be used to identify the intellectually gifted preschool and young school-age child. The teacher observes how the child functions as a member of a group in an academic and social context. The parent observes how the child functions independently at home, isolated from peer groups, but as a member of a family group.

Certain factors may influence teacher judgements causing an incorrect rating of some children. Under-age unattractive appearance, obnoxious behavior, and personality conflicts are factors which may cause an intellectually gifted child to be overlooked or underrated. Overage, attractive appearance, courteous behavior, and

cooperative personality may cause an average child to be rated too high.

Identification of the intellectually gifted preschool child by teacher observation is a subjective technique. Using various characteristics within Renzulli's (1979b) categories introduces a degree of control into the process and reduces the effect of teacher bias on the final decision. The three categories are: above average general ability, high level of task commitment, and high level of creativity.

Expected performance level of the intellectually gifted child in these three categories is approximately two or more years above the average level appropriate for child's chronological age level. A checklist consisting of known gifted characteristics can provide a valid technique in the initial identification procedure of intellectually gifted preschoolers.

Renzulli (1979a) suggested that identification programs for intellectually gifted children be constructed within certain guidelines. These guidelines include provision for the process of subjective evaluation of those characteristics such as creativity and task commitment which cannot be measured by IQ and achievement tests. Robinson et al. (1979) suggested additional guidelines are needed for the identification of intellectual advanced preschoolers. These are necessary

because of a preschoolers young age and the incomplete knowledge of their observed intellectually advanced developmental patterns.

CHAPTER III

METHOD OF RESEARCH

Construction of Instrument

The Instrument, Observation Guide for Identification of Intellectually Advanced Preschoolers (Appendix A) was developed to rate preschoolers on characteristics of intellectual advancement. The guidelines suggested by Renzulli (1979b) and Robinson et al. (1979) were used as the basis for the construction of the instrument.

Characteristics applicable to preschoolers were extrapolated from indicators of intellectual advancement in school-age children noted in the literature review. It was assumed these identifying characteristics were common to all age categories. It was also assumed that related social area characteristics could be used with the intellectually superior characteristics to assist in identifying intellectually advanced preschool children, but that they should not be used alone. The presence or lack of related nonintellectual factors was considered in relationship to superior intellectual characteristics. Only those characteristics which are common to both the social and intellectual areas were used in the developed instrument.

The selected characteristics were placed in three categories Renzulli (1979b) considered necessary components

of an individual's intellectual advancement. These categories are above average general ability, task commitment, and creativity.

Instructions for Use of the Observational Guide for Identification of Intellectually Advanced Preschoolers (Appendix B) was designed to provide information and directions for teachers. The instructions reviewed the basic purposes of the instrument and discussed the many factors which influence observational judgements. These factors were emphasized throughout the literature review.

Achieving Instrument Validity

The instrument was presented to a panel of experts to establish content validity for the characteristics within the categories. The judges were:

1. Terri Davis, Ph.D., Superintendent of Sparta Public Schools, Sparta, Michigan. She has experience as a kindergarten teacher and has a continuing interest in the area of preschool giftedness. Her doctoral dissertation was entitled Pre-school Identification of the Child with High Academic Aptitude.

2. John Hoogstra, Ph.D., Psychological Testing Center, Holland Public Schools, Holland, Michigan. He is responsible for preschool testing and has considerable experience with various evaluation instruments for school readiness and academic aptitude.

3. Merri Warren, Sp.Ed., Director of Reading and Language Arts and Coordinator of Gifted and Talented Program of the Kentwood Intermediate District, Certified Trainer for Talented Unlimited, Kentwood, Michigan; staff member at Aquinas College teaching courses dealing

with the gifted and talented, Grand Rapids, Michigan.

4. Dorothy Westra, Ph.D., Elementary Education Department, Calvin College, Grand Rapids, Michigan. Her doctoral dissertation was entitled Creative Thinking of Pre-Kindergarten Children in Two Schools. She has a continuing interest in that area of childhood development.

The process of judging the validity of the characteristics within the categories and subcategories was expected to be highly subjective. Since equally competent judges may differ in their appraisals it was planned to obtain independent appraisals and then combine them. The instrument was presented to each judge during a personal interview. The interviews were planned to review the appropriateness of the included characteristics and to check the clarity of the statements. Additional suggestions for missing characteristics were also requested.

Conversations with the judges resulted in no new suggested characteristics for the identification instrument or the instructions. All of the included characteristics were recommended as appropriate inclusions for an instrument of this type. Discussions did result in several semantic recommendations and each was considered in the final version of the instrument. Consideration was given to additional quantifying of the characteristics. It was felt the effect of such changes would discriminate

against the selection of lower socioeconomic and ethnic minority children.

Study Population

The five nursery schools and/or day care centers participating in the study were:

1. Fellowship Preschool Development Center, Big Rapids, Michigan
2. First United Nursery, Holland, Michigan
3. Head Start, Harrington Public School, Holland, Michigan
4. Sparta Nursery Center, Inc., Sparta, Michigan
5. Temple Emanuel Nursery, Grand Rapids, Michigan

These five centers represented three types of facilities: (a) Head Start, (b) Private, and (c) Public. The study population included children in both full day child care and half day nursery school centers. The centers were found in urban, suburban, and rural localities. The study population was selected to include minorities and students representative of families at all income levels.

Eleven teachers in the centers assisted as observers and recorders in the data collection procedure. These teachers selected the preschoolers they felt could be identified as average and above average. Between 65 and 100% of the preschoolers were rated in the classes

comprising the study population. Using the observation guide as an identification tool a total of 249 children were evaluated in the five centers.

Several teachers did not wish to participate in the reevaluating procedure. Due to this situation a random sample of the total population could not be reevaluated. To maintain uniformity at least seven preschoolers were selected in each center for the repeat evaluation. These individuals were selected by the center's head teacher/ director. A total of 36 preschoolers from the study population were rated a second time.

Data Collection

Each teacher was given a packet containing the following:

1. Center Information Form (Appendix C)
2. Instructions for Use of the Observation Guide for Identification of Intellectually Advanced Preschoolers (Appendix B)
3. One copy of observation guide (Appendix A) for each preschooler to be rated on characteristics for intellectual advancement
4. Teacher Opinion Form (Appendix D)

Approximately one hour of inservice instruction was provided at each center before the observation guide was used by the teachers. At this session the instrument and instructions provided for its use were reviewed. The teachers had many questions related to their participation

in the data collection procedure. The resulting discussion involved such topics as purpose of the study, ability to observe the characteristics, nature of the rating scale, and the relationship of the evaluative outcome to children, parent, teachers, and center program.

Additional time was spent at each center when the completed sets of observation guides were picked up. Discussions with individual teachers were held in areas of interest generated by the observational guide. The Teacher Opinion and Center Information forms were collected and additional observation guides provided for re-testing seven students in the center. Because of interference from bazaars, teacher conferences, and the Thanksgiving holiday, the completion time for the follow-up administration of the instrument was spread over three weeks in the different centers.

Informational discussions were again held with the teachers following the repeat evaluation process. This discussion generally used comments which the teachers had previously provided on the Teacher Opinion Form to stimulate responses. In addition to teacher initiated interest areas, the following questions were pursued:

1. Did items clarify for the teacher what constituted intellectual advancement in preschoolers? How?

2. Did teacher feel instrument helped to focus attention on the advanced

intellectual characteristics instead of on other distracting characteristics?

3. Did teacher feel the instrument identified the intellectually advanced preschoolers in that class?

4. If this instrument was available, how would it be used by the teacher?

Treatment of Data

The one-way analysis of variance technique was used to test for significant differences between the scores provided by the teacher observers for the centers, classes, and sexes. The F values obtained were compared with tabled values to establish whether the results were significant or not.

The Pearson product-moment formula was used to determine correlation coefficients between age in months of the individuals in the population with category, subcategory and combined total scores on the instrument. Statistical confidence levels for the correlation coefficients were determined by comparing the results with tabled values.

The Pearson product-moment formula was also used to determine correlation coefficients among the scores presented in the categories, subcategories, and combined total. This correlation was accomplished for the initial teacher provided evaluative observation scores. These statistics provide a measure of internal consistency for the instrument.

The Pearson product-moment correlation formula was used to find the relationship between the category, subcategory, and combined total scores of the initial and repeated evaluative observation. The resulting correlation coefficients provide a measure of the reliability of the instrument.

Summary

The following major procedural steps were used to carry out the study:

1. Construct the Observation Guide for Identification of Intellectually Advanced Preschoolers and Instructions for Use of the Observation Guide for Identification of Intellectually Advanced Preschoolers instruments.

2. Present the instrument to a panel of experts each of whom would judge the characteristics of intellectual advancement to establish content validity.

3. Collect evaluative data provided by teachers in 11 classes at five centers using the instrument to rate 249 young children.

4. Tally the numerical data, weighting the evaluative checks placed in appropriate columns by classroom teachers. Frequently observed was assigned a value of 3, occasionally observed a value of 2, and never observed a value of 1. Minimum combined instrument score was 46. Maximum evaluative score on the instrument was 138.

5. Use one-way analysis of variance technique to test for significant differences between centers, classes, and sexes (N=249).

6. Use Pearson product-moment correlation formula to compare age with category, subcategory, and combined total instrument scores (N=249).

7. Use the Pearson product-moment correlation formula to check relationships among category, subcategory, and combined total scores for a measure of instrument internal consistency (N=249).

8. Repeat the evaluative observations. Use the Pearson product-moment correlation formula to determine the correlation coefficients between the category, subcategory, and combined total scores for the initial and repeated observation (N=36).

9. Select a minimum identification score for preschool intellectual advancement at one standard deviation above the mean for the initial combined evaluative scores (N=249).

Table 1 summarizes the sequence of events which were followed to collect the data.

Table 1. Sequence of Events for the Data Collection Procedure (1981)

	Fellowship Preschool Development Center	First United Nursery	Head Start, Harrington Public Sch.	Sparta Nursery, Inc.	Temple Emanuel Nursery
Contact Center to discuss study and request cooperation	Oct. 8	Nov. 2	Nov. 3	Sept. 29	Oct. 6
Provide inservice instruction and deliver instrument packet to teachers	Nov. 1	Nov. 18	Nov. 11	Oct. 29	Oct. 29
Retrieve initial data and Teacher Opinion Form; deliver instruments for second rating; discuss questions generated during use of instrument	Nov. 9	Nov. 25	Nov. 18	Nov. 12	Nov. 5
Retrieve repeated ratings and conduct follow-up discussion with teachers	Nov. 16	Dec. 5	Nov. 30	Nov. 23	Nov. 19

CHAPTER IV

ANALYSIS OF DATA, RESULTS, AND CONCLUSIONS

An instrument was constructed using characteristics believed to indicate intellectual advancement in preschool children. These characteristics were extrapolated from the literature related to intellectually gifted school-age children. The study was completed to determine if the observation instrument could increase preschool teacher awareness of accepted characteristics for intellectual advancement in preschool children.

Summaries of the opinions of teacher-observers about the Observation Guide for the Identification of Intellectually Advanced Preschoolers are presented in this chapter. The actual comments collected on a Teacher Opinion Form are listed in Appendix E. Statements given during personal follow up interviews to clarify original teacher comments are shown in Appendix F.

Analysis of data using the one-way analysis of variance to test for differences between the scores on instrument categories, subcategories, and combined categories by center, class, and sex is listed. Pearson product-moment correlation coefficients are shown for the relationships of category score and age, category scores within the instrument, and category scores between two

evaluative observations. Data used to select a minimum identification score for preschool intellectual advancement is discussed.

Questionnaire and Interview Data

Questionnaire and Interview Responses--Study Question Number One

To answer study question number one and determine if the constructed instrument was useful for increasing the awareness of accepted intellectual advancement characteristics among preschool educators, the Teacher Opinion Form (Appendix D) was completed by teachers who participated in the study. Nine questionnaires were returned. Two centers elected to reach a concensus and answer the questions as a group. The specific teacher comments are listed in Appendix E.

Teachers from the centers were interviewed individually and/or collectively to clarify and further develop the opinions stated on the questionnaire. The following questions, closely related to those stated on the Teacher Opinion Form, were used to conduct the interviews:

1. Did items clarify for the teacher what constituted intellectual advancement in preschoolers? Why?
2. Did teacher feel instrument helped to focus attention on the advanced intellectual characteristics instead of on other distracting characteristics? How?

3. Did teacher feel the instrument identified the intellectually advanced preschoolers in their class? Why?

4. If this instrument was available, how would it be used by the teacher?

Teacher responses to these interview questions are shown in Appendix F.

Questionnaire responses and personal interview data illustrated the following about the observation guide, its value for clarifying intellectual advancement, its potential for identifying intellectually advanced preschoolers, and its overall usefulness:

1. The instrument is reported to be useful in observing and rating preschooler exhibited characteristics only after the teacher has spent considerable time with a young child in appropriate activities. The activities provide the basis for decisions which need to be made with as much observational information available as possible.

2. The characteristics listed on the instrument appeared to have provided a clearer understanding and new insight into what actually constitutes intellectual advancement in preschoolers as it is observed by teachers.

3. The ease with which the teachers made the rating seemed to be dependent in part on the importance placed on any or all of the instrument areas by a teacher in a center's curriculum.

4. The characteristics of the instrument may have helped provide structure and organization for and consistency in a total evaluative process.

5. The evaluation of preschoolers on the characteristics in the three instrument categories may provide information essential

in developing a beneficial and challenging curriculum for the intellectually advanced preschooler.

6. The instrument may best be applied to rate intellectual development in a select preschooler or selected groups of preschoolers rather than across a total population.

Analysis of Score Data

Statistical computations were completed by computer. The Pearson product-moment correlation and one-way analysis of variance techniques, aspects of a MINITAB computer program, provided the statistical output. The correlation coefficients were tested for significance using a conversion formula (Weinberg and Schumaker, 1966, p. 288) to obtain a z value. The z value, as representative of the r value, was then located in the normal distribution. A table in Weinberg and Schumaker (1966, p. 320) was used to determine whether the obtained results were statistically significant. The F values obtained from the analysis of variance calculations were compared with values tabled in Hays (1963, p. 677) to determine if the results were significant.

Analysis of Evaluative Scores by Center, Class, and Sex--Study Question Number Two

The one way analysis of variance technique was used to compare the evaluative scores given individuals of the population by center for instrument categories, subcategories, and combined totals. The F ratios obtained

are shown in Table 2. A significant difference exists among the centers only in the intellectual subcategory at the .05 level.

Comparisons were also made by class and sex. Differences between the classes were significant at the .05 level in all areas of the instrument. Differences by sex were not significant in any of the instrument areas at the .05 level. The F ratios for the score data for classes and sexes are also shown in Table 2.

At the .05 level of statistical significance reported for these results, it could be expected that the difference found would occur in 95 to 100 repetitions of the study. These differences by class in all areas and by center in the intellectual area could result from teacher inconsistency in rating intellectual advancement. It could also be the result of a varied classroom instructional emphasis, or the diverse nature of the represented student groups.

The significant difference found in the intellectual subcategory scores between centers may also result from socioeconomic influences in the center subpopulations. This influence could affect teacher perception of intellectual development levels. It may also account for the differences found between classes on all instrument areas.

A significant difference was found between classes in general ability (intellectual, socio-emotional-moral), task

Table 2. One-way Analysis of Variance F Values on the Instrument Scores for Centers, Classes, and Sexes (N=249)

Instrument Area	F Value		
	Centers	Classes	Sexes
General Ability[a]	2.21 NS[b]	9.84 S[d]	.84 NS[e]
Intellectual	2.58 S[c]	7.70 S[d]	.07 NS[e]
Social, Emotional and Moral	1.40 NS[b]	10.48 S[d]	2.88 NS[e]
Task Commitment	1.31 NS[b]	5.35 S[d]	.67 NS[e]
Creativity	1.75 NS[b]	7.08 S[d]	.49 NS[e]
Combined Total	1.71 NS[b]	9.20 S[d]	.74 NS[e]

[a]General Ability has two subcategories.

[b]Not Significant at 0.05. Tabled $F^{0.05}_{(4,\infty)}$ value is 2.37.

[c]Significant at 0.05. Tabled $F^{0.05}_{(4,\infty)}$ value is 2.37

[d]Significant at 0.05. Tabled $F^{0.05}_{(10,\infty)}$ value is 1.83.

[e]Not Significant at 0.05. Tabled $F^{0.05}_{(1,\infty)}$ value is 3.84

commitment, and creativity categories, but no significant difference was found in the socio-emotional-moral subcategory of general ability, task commitment, and creativity categories for the centers. This may indicate that statistically there was less influence in the larger center subpopulations than the smaller class subpopulations. The chance of a significant difference is greater when smaller groups are compared. The degree of influence of socioeconomic level on teacher perception of individual students in a group will seem to be greater or smaller depending on which size subpopulation is being analyzed.

Correlations of Age and Evaluative Scores--Study Question Number Three

The Pearson product-moment correlation formula was utilized to determine the relationship between age in months of the individuals in the population and their scores in areas of the instrument. The correlation coefficients are shown in Table 3. Levels of statistical significance are also reported. The slightly positive relationship which exists between age and scores for all areas illustrates that in the population tested the factors may have very little in common. Although the task commitment and creativity areas had coefficients higher than the others they were slight, but significant at the .05 level.

Table 3. Correlation Coefficients of Scores with Age (N=249)

Instrument Area	Correlation Coefficient
General Ability[a]	.031 NS[b]
Intellectual	.061 NS[b]
Social, Emotional and Moral	.028 NS[b]
Task Commitment	.123 S[c]
Creativity	.117 S[c]
Combined Total	.072 NS[b]

[a]General Ability has two subcategories.

[b]Not Significant at 0.05.

[c]Significant at 0.05.

The fact that reliability coefficients are statistically significant does not change the level of the relationship between the factors. Score based on age would be expected to show little relationship. If intellectual advancement were age predictable this would not be the case. The mean age of the population was 51 months. (four years and three months)

Correlations of Scores for Various Instrument Areas--Study Question Number Four

To answer the study question, "Is there a positive relationship among the scores of the instrument areas evaluated?", score data was analyzed to provide a measure of internal consistency for the instrument. Each instrument area score was compared with the others using the Pearson product-moment correlation formula. The resulting correlation coefficients are shown in Table 4.

The coefficients obtained showed relationships of scores on instrument areas with the combined total that were highly positive. The slightly lower positive coefficients obtained when comparing the instrument area scores with each other probably verifies the unique features of each category and the common relationships they have within intellectual advancement. This seems to indicate that the selected characteristics in each area are also related and probably illustrates intellectual advancement.

Table 4. Correlation Coefficients for Scores of Various Instrument Areas on Initial Teacher Evaluation (N=249)

	Social, Emotional, Moral	Gen'l Ability	Task Commit-ment	Crea-tivity	Combined Total
Intel-lectual	.736 S[a]	.959 S	.673 S	.776 S	.928 S
Social, Emotional, Moral		.894 S	.592 S	.771 S	.868 S
General Ability[b]			.684 S	.829 S	.966 S
Task Commit-ment				.679 S	.809 S
Crea-tivity					.911 S

[a]Significant at 0.01.

[b]General Ability represents the total of the Intellectual, and Social-Emotional-Moral subcategories.

These findings appear to support Renzulli's (1979b) contention that each category is interrelated, necessary, and all are equal partners in contributing to intellectual advancement and any creative/productive accomplishment. The combined score on the instrument is noted as a better predictor of an area score than one area score is a predictor of the score in another area.

Correlations of Scores on Initial and Repeat Evaluations--Study Question Number Five

The Pearson product-moment correlation formula was used to find the relationship of scores assigned on two separate evaluations to answer study question number five. The resulting positive correlation coefficients are shown in Table 5. General intellectual ability and social, emotional, and moral coefficients were significant at the .05 level. Overall the correlations of the initial with repeat instrument area scores, as measures of external consistency, illustrated very slight relationships. This conclusion tends to support the findings of Bayley (1955) and Robinson et al. (1979) which describe the difficulty of finding a good estimate of a preschooler's capabilities.

The following rationale is provided for the very slight relationship of the instrument scores on the initial and repeat observations:

Table 5. Correlation Coefficients for Scores of Initial with Repeat Evaluation (N=36)

Instrument Area	Correlation Coefficient
General Ability[a]	.279 S[b]
Intellectual	.268 NS[c]
Social, Emotional, Moral	.289 S[b]
Task Commitment	.162 NS[c]
Creativity	.219 NS[c]
Combined Total	.258 NS[c]

[a]General Ability has two subcategories

[b]Significant at 0.05.

[c]Not Significant at 0.05.

1. Teachers may have used evaluative criteria which did not compare children in their classes.

   ("didn't want to mark never")
   ("don't have any gifted this year")

2. Teachers may have learned to be better observers after the initial evaluation and then looked for different behaviors, prompted by the earlier practice with the instrument.

   ("instrument clarified what constitutes advancement by specifying characteristics")

3. Children's behavior may have changed between the two evaluative reports. Intellectual development in children at preschool ages is uneven and frequently rapid.

4. Environmental changes between the two evaluative observations (bazaars, Thanksgiving, chicken pox, Holiday plans) may have influenced children's behavior and/or teacher's perception.

5. Teachers may not have known the children well enough so early in the school year to be reliable with their appraisals.

   ("I will know the children better later in the school year")

6. Scores achieved through personal judgements may tend to be inconsistent.

7. Teachers may find it difficult to recognize and distinguish between emerging new abilities and seldom observed internalized skills.

8. Teachers may have resented having to observe and evaluate or have been less interested in the second rating. Some could have suffered from the "retest" syndrome as students do when repeating a test for the second time for statistical purposes.

Martinson (1974) noted that Pegnato found a variance between scores achieved on different IQ tests in his research population of junior high students. Since a score

variance was found in older children, it is not surprising that would be found in preschoolers.

Developmental patterns in young children are uneven and rapid at times. It seems likely that the variance between the test/retest relationship could be accentuated by the inconsistencies of teacher observation reports due to a suspected lack of ability to evaluate the advanced characteristics within a rapidly changing developmental context.

Descriptive Statistics for Scores on the Initial Evaluation--Study Question Number Six

"What value will provide an acceptable minimum selection score for intellectual advancement as found in a preschooler?", was the last study question. The determined value was selected following an analysis of literature research and instrument score data. The mean and standard deviation of the scores reported for the initial evaluation are reported in Table 6.

A score resulting from a teacher evaluative observation with the observation guide instrument and suggested for selecting intellectually advanced preschoolers was set at 88. This score, one standard deviation above the mean of the combined instrument scores, is comparable to an IQ of 115. Forty-four individuals in the population had a score at least one standard deviation above the mean.

Table 6. Descriptive Statistics for Initial Evaluation Scores (N=249)

Instrument Area	Maximum Score	Mean	S.D.
General Abiiity[a]	84	40.980	11.0
Intellectual	54	25.594	7.29
Social, Emotional, Moral	30	15.426	4.47
Task Commitment	24	12.470	4.10
Creativity	30	15.783	5.15
Combined Total	138	69.337	18.70

[a]General Ability has two subcategories.

This selection score would allow approximately 16% of the population to be included in a selection group. A cutoff score of 88 on the observational guide instrument may be used to identify a larger proportion of those who should be identified as intellectually advanced than the 50% of the true population, it is estimated, teacher selection alone identifies.

An achievement at this level will include some children who may be "bright" rather than intellectually advanced. Since it is so difficult to identify an intellectually advanced preschooler and to be confident about the accuracy of that identification it was determined more desirable to use a lower cutoff score to include some "bright" children rather than use a higher score and run the risk of missing an unsuspected intellectually advanced child. As suggested by Martinson (1974a) it is more serious to misidentify a child who is intellectually advanced than it is to misidentify a child who is not. The relatively imprecise nature of any tool to be used with preschoolers suggests this conclusion. It is probably an accurate conclusion when the score is the result of observer judgement and a preschooler's elusiveness on the characteristics being evaluated. It is also a reasonable conclusion when the outcomes will tend to be in the areas of curriculum development for the individual involved.

Summary of Data Relative to the Study Questions

Information related to the usefulness of the observation guide for increasing an awareness among preschool educators of accepted intellectual advancement characteristics was summarized in this chapter. Actual comments collected by questionnaire and personal interview are found in Appendices E and F.

The one-way analysis of variance technique was used to analyze data collected to answer study question two, "Is there a difference between the scores of the centers, classes, and sexes in the areas evaluated?" The results are recorded in Table 2, p. 60.

To answer study question three, "Is there a positive relationship between age and evaluative scores?", score data was analyzed using the Pearson product-moment correlation formula. The correlation coefficients are listed in Table 3, p. 62.

The Pearson product-moment formula was also used to analyze data to answer study question four, "Is there a positive relationship between the scores on the instrument areas evaluated?" These coefficients are noted in Table 4, p. 64.

To answer study question five, "Is there a positive relationship between the scores on the instrument area evaluations over two observations?", the Pearson product-

moment correlation formula was used. These data are recorded in Table 5, p. 66.

The mean and standard deviation of the scores for the initial evaluation are reported in Table 6, p. 69. This information was used to answer study question six, "What value will provide an acceptable minimum selection score for intellectual advancement as found in a preschooler.

CHAPTER V

SUMMARY, FINDINGS, AND RECOMMENDATIONS

Summary

The study involved the preparation of an Observation Guide for the Identification of Intellectually Advanced Preschoolers. Characteristics of intellectual advancement for young preschool children were extrapolated from those illustrated in known gifted school children and adults described in the research literature. On the instrument the descriptive characteristics were placed in three categories: (a) general intellectual ability; (b) task commitment; and (c) creativity. The general intellectual ability category was further divided into intellectual and social-emotional-moral subcategories.

Instructions for teacher use of the instrument were also developed. This information included background material on the nature of intellectual advancement as reported in the research literature. It also included suggestions to guide the teachers in making decisions when evaluating their students with the instrument.

A panel of experts was selected to provide content validity for the characteristics chosen for inclusion in the instrument. Personal interviews were held with each

of four judges and their combined evaluative opinions used in the final draft of the instrument.

Teachers in 11 classes at five preschool settings evaluated 249 preschoolers using the observation guide. A repeat evaluation was made by the teachers for 36 children across the population between one and three weeks later. Teachers were asked to rate each child and note whether the characteristic was never, occasionally, or frequently observed. These observations were weighted 1, 2, and 3, consecutively, to arrive at category, subcategory, and a combined total score. The centers were selected to provide a cross section of preschool settings to include socioeconomic and cross-cultural environments. Teachers were asked to evaluate the observation guide following the evaluations and to provide opinions about and suggestions for using the instrument. These data were classified during personal interviews at the close of the data collecting procedure.

The study provided data to answer the following questions:

1. Is the instrument useful for increasing the awareness of accepted intellectually advanced characteristics among preschool educators?
2. Is there a difference between the scores of the centers, classes, and sexes in the areas evaluated?
3. Is there a positive relationship between age and evaluative scores?

4. Is there a positive relationship among the scores of the instrument areas evaluated?

5. Is there a positive relationship between the scores on the instrument areas evaluated over two observations?

6. What value will provide an acceptable minimum selection score for intellectual advancement as found in a preschooler?

Findings

Study Question Number One

Is the instrument useful for increasing the awareness of accepted intellectually advanced characteristics among preschool educators?

The Observation guide for Identification of Intellectually Advanced Preschoolers may be used as the initial tool in an identification program. The teacher's use of the instrument with selected children may help determine if gifted characteristics exist. Later individual IQ and/or achievement tests can be used to determine the degree of intellectual advancement.

The teacher-observers reported that the observation guide clarified definite intellectual advancement characteristics as it provided insight into areas of child development. They felt that considerable observational knowledge of the preschoolers to be evaluated was necessary to adequately complete the ratings. The instrument appeared to assist the teachers in looking past behavioral

situations, speech problems, and emotional upsets to spotlight less obvious skills and attitudes. Characteristics which were easier to evaluate than others were likely to be among those emphasized in a center's curriculum and/or programming. It was noted that the teachers using the instrument thought it would help identify developmental needs and guide teachers in looking toward intellectual advancement aspects which are generally not considered. A greater awareness of possible giftedness characteristics seemed to be an important outcome. While the instrument appeared to focus on traits which seemed more difficult to identify the resulting increased awareness was thought to lead to new interpretations of developmental behaviors. Teacher comments seemed to indicate a lack of confidence in their ability to apply the knowledge gained from the evaluative process. This may in part result from a lack of sufficient knowledge about curriculum sequencing pertaining to the intellectually advanced preschool child.

Study Question Number Two

> Is there a difference between the scores of the centers, classes, and sexes in the areas evaluated?

A significant difference was found between the centers in the intellectual area of the general ability category. The score differences were not great enough, however, to result in a significant difference for the social-

emotional-moral subcategory and general ability, task commitment, or creativity categories. These findings may be the result of varied socioeconomic levels and educational goals within the centers. It would seem that these would have the greatest effect on scores in the intellectual area.

Significant differences for all area scores found between classes may have been the result of different instructional emphases, varied student groups, and/or the possibility of an individual teacher's perception of intellectual advancement resulting in skewed ratings. Results of the study appeared to indicate that score predictions could not be made on the basis of sex. This may show that although boys tend to mature developmentally somewhat slower than girls these differences may have been taken into consideration by teachers during evaluation of the classes.

Study Question Number Three

Is there a positive relationship between age and evaluative scores?

Results of the study seemed to indicate that evaluative scores for intellectual advancement were not age dependent. The teachers in the study apparently were not influenced by an age or appearance bias. It appears they were aware of the biases which were noted by Heck (1953) and provided in the observation guide instructions.

Study Question Number Four

> Is there a positive relationship among the scores of the instrument areas evaluated?

High, positive, reliability coefficients were found among the scores on the instrument categories and subcategories. (General ability, intellectual, social-emotional-moral, task commitment, and creativity) These results seem to indicate that not only are the instrument areas interrelated, but the characteristics are also related to and indicative of intellectual advancement. It appears that each area may be used as an indicator of intellectual advancement, but that combined ratings for the three instrument categories provide increased reliability. This finding supports Renzulli's (1979b) conclusion that giftedness consists of an interaction of the instrument categories and subcategories.

Study Question Number Five

> Is there a positive relationship between the scores on the instrument areas evaluated over two observations?

Study results provided evaluation-reevaluation reliability information for the observation guide which indicated very slight, positive, relationships between the score sets correlated. This may have been caused by the combined influence of: (a) tendency of rating scales to be less precise, (b) inconsistency of rating judgements,

and (c) rapid and uneven developmental patterns in young children. These findings tend to support Robinson et al. (1979) who found that even a battery of tests may not be able to provide a good estimate of preschooler capability. It may not then be surprising to find little consistency between two evaluations using the same instrument.

Study Question Number Six

> What value will provide an acceptable minimum selection score for intellectual advancement as found in a preschooler?

A score of 88 was established as the minimum combined cutoff score using the observation guide as an identifying tool. This score was one standard deviation above the mean and equivalent to an IQ of 115. Such a score should identify approximately 92% of those preschoolers who should be identified as intellectually advanced.

Recommendations

Changes in Instructions for the Use of Observation Guide

The following changes in the instructions for the use of the observation guide are recommended. (See Appendix B) The necessity for these semantic changes became apparent during teacher training and follow up sessions. The defined minimum selection score for intellectual advancement also needs to be reported on those instructions.

See A - 3 Assist in program development

The following substitutions should be made:

for b: Encourage development in other areas less advanced, but showing indication of possessing higher ability.

for c: Provide help in areas of apparent intellectual development where child appears behind or below avarage because of seeming neglect.

See B - 3 Teacher Bias

The following substitutions should be made:

for a: Child appears younger or older than size and behavior indicates.

for b: Child exhibits uncooperative personality or cooperative behavior in relationship with teachers.

for c: Child has unattractive or attractive appearance.

for d: Child exhibits obnoxious nonconforming behavior or courteous conforming behavior toward peers and teachers.

See C - 5 Tally Scores

The following changes should be made under C - 5:

Eliminate c.

Reletter point d, assign it c.

Add a point d: Record total in designated space on tally sheet of observation guide.

Add a point e: A total combined instrument score of 88 and above would indicate advanced intellectual ability.

Add a new section D Interpretation of Scores

Under D add the following:

1. If a score of 88 or above is achieved the administration of an IQ and/or achievement test may be valuable at a future date. The score is a point one standard deviation above the mean on a norming population. (N=249)

2. When used for diagnostic purposes scores in each category should be evaluated as they interact with each other. Each of the categories represent a different type of behavior. This diagnostic procedure will provide direction for the development of a challenging and interesting curriculum meeting the needs of the intellectually advanced preschooler.

Changes in Preschool Teacher Training Programs

A greater emphasis could be placed on the interrelationship of curriculum development and child development in preservice teacher training programs. This could have a positive effect on both preschool curricula and intellectually advanced preschoolers.

Suggestions for Further Research

Since the characteristics used in the observation guide were derived from the literature most frequently describing school-age children, a longitudinal study is necessary to determine if the advanced characteristics seen in preschoolers will continue to be evident through all

developmental stages into adulthood. More data are needed to determine if advanced development of these intellectual characteristics must appear at an early age if children of both sexes are to develop into intellectually advanced adults.

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APPENDIX A

Observation Guide for Identification of Intellectually Advanced Preschoolers

Tally Sheet

Age at Evaluation: _____yrs. _____mos. Male_____ Female_____

Birthday: _____
year month day

Date evaluated: _____
year month day

Observer(s)_____(teacher, assistant, and/or aide)

Categories	A	B	C	Total
ABOVE AVERAGE GENERAL ABILITY				
Intellectual				
Column subtotals	____	____	____	
	x1	x2	x3	
Weighted column subtotals	____	____	____	_____
Social, Emotional, and Moral				
Column subtotals	____	____	____	
	x1	x2	x3	
Weighted column subtotals	____	____	____	_____
ABOVE AVERAGE TASK COMMITMENT				
Column subtotals	____	____	____	
	x1	x2	x3	
Weighted column subtotals	____	____	____	_____

Categories	A	B	C	Total
ABOVE AVERAGE CREATIVITY				
Column subtotals	___	___	___	
	x1	x2	x3	
Weighted column subtotals	___	___	___	_____

RESPONSE SHEET

A = NEVER observed

B = OCCASIONALLY observed

C = FREQUENTLY observed

Characteristics	A	B	C
ABOVE AVERAGE GENERAL ABILITY			
Intellectual			
1. Learns new skills more quickly, with less practice	____	____	____
2. Speaks more fluently than other children the same age (ignore speech defects)	____	____	____
3. Utilizes large vocabulary in a meaningful way	____	____	____
4. Uses unusual descriptive words and expressions not expected of child same age	____	____	____
5. Uses more complex sentence structure	____	____	____
6. Asks provocative questions (why, how) concerning a wide range of interest	____	____	____
7. States things other children of same age are not aware of	____	____	____
8. Shows interest in books	____	____	____
9. Prefers factual books rather than fairy tales	____	____	____
10. Chooses books and topics usually associated with older child's interest level	____	____	____

Characteristics	A	B	C
ABOVE AVERAGE GENERAL ABILITY (continued)			
11. Taught self to read earlier than other children the same age	____	____	____
12. Uses correctly number concepts and relationships unusually advanced for age group	____	____	____
13. Expresses interest in time relationships not usually associated with same age group	____	____	____
14. Uses correctly time concept as related to calendars and clocks	____	____	____
15. Uses correctly time concept as related to yesterday, today, and tomorrow	____	____	____
16. Is observant, keen and alert; remembers more of what is seen, heard and read	____	____	____
17. Performs difficult mental tasks	____	____	____
18. Reasons things out for self, uses practical knowledge and insight into cause-effect relationships	____	____	____
Column subtotals	____	____	____
	x1	x2	x3
Weighted column subtotals	____	____	____
Social, Emotional, and Moral			
1. Enjoys being with people of all ages	____	____	____

Characteristics	A	B	C
ABOVE AVERAGE GENERAL ABILITY (continued)			
Social, Emotional, and Moral (continued)			
2. Associates with adults and older children, if given choice	____	____	____
3. Displays capacity to be group leader	____	____	____
4. Likes to dominate, organize, and direct activities when in group	____	____	____
5. Thinks of something to do, takes initiative	____	____	____
6. Verbalizes ideas and questions about God and supernatural powers (usually ideas associated with older children)	____	____	____
7. Verbalizes ideas and questions about death (usually ideas associated with older children)	____	____	____
8. Distinguishes between fantasy and reality	____	____	____
9. Passes judgement on self and others, is concerned with fairness, honesty, right and wrong (may appear to be tattletale)	____	____	____
10. Verbalizes and/or shows concern for cause of emotional state of another (sadness, happiness, excitement, anxiety, anger, or fear)	____	____	____
Column subtotals	____	____	____
	x1	x2	x3
Weighted column subtotals	____	____	____

Characteristics	A	B	C
ABOVE AVERAGE TASK COMMITMENT			
1. Concentrates and pays attention for longer periods of time	____	____	____
2. Works independently	____	____	____
3. Organizes and directs self, is goal oriented	____	____	____
4. Makes adjustments to situations, is less subject to peer pressure for conformity	____	____	____
5. Desires to learn and/or solve problems with persistent intrinsic motivation, must find answer to question	____	____	____
6. Formulates own ideas, is self assertive and stubbornly set in own ways	____	____	____
7. Strives for perfection, is critical of self and others	____	____	____
8. Devotes attention to, is absorbed and involved in certain topic or problem to exclusion of other interests	____	____	____
Column subtotals	____	____	____
	x1	x2	x3
Weighted column subtotals	____	____	____
ABOVE AVERAGE CREATIVITY			
1. Produces large quantities of ideas, possibilities, consequences and related ideas to a given situation or "what if" question, is fluent thinker	____	____	____

Characteristics	A	B	C
ABOVE AVERAGE CREATIVITY (continued)			
2. Uses different alternatives and approaches to problem, is flexible thinker	____	____	____
3. Improvises with common materials and objects	____	____	____
4. Produces new, unusual, unconventional associations from information, is original thinker (gives "silly" answers)	____	____	____
5. Sees relationships between related and unrelated objects, ideas, or facts.	____	____	____
6. Feels free to disagree or think differently, not afraid of new ideas and concepts	____	____	____
7. Displays imagination, sense of humor, fantasy, intellectual playfulness	____	____	____
8. Displays curiosity about objects, events, ideas in environment	____	____	____
9. Recognizes cause and effect relationships	____	____	____
10. Articulate in role playing and story telling, is wholeheartedly involved	____	____	____
Column subtotals	____	____	____
	x1	x2	x3
Weighted column subtotals	____	____	____

APPENDIX B

Instructions for Use of the Observation Guide for Identification of Intellectually Advanced Preschoolers

While working with young children, a teacher is soon aware of those thought to be "advanced" in various areas such as psychomotor, social and/or intellectual. As the teacher observes the group, consciously or unconsciously, each child within the group is measured against the group. Assuming the observer is knowledgeable in the area of childhood development, a rating scale will provide a degree of control to this subjective process of observation.

Research has shown that an informed teacher is capable of making more accurate judgements about intellectual advancement than an uninformed teacher. Although the use of a rating scale is an imprecise technique, as an organized list of characteristics, it focuses attention on characteristics applicable to the identification of intellectual advancement and helps us ignore those which do not.

This observational guide is designed to assist the preschool teacher identify those preschool children who demonstrate intellectually advanced characteristics as observed in a group setting. The observable characteristics are divided into three categories: general ability, task commitment, and creativity. Advanced

development of these characteristics has been reported in research literature as being indicative of intellectual advancement in school-age children. Until further research is reported for the preschooler or young child who because of age is not eligible to enter kindergarten, it is being assumed these intellectual characteristics can also be rated to the expected developmental level of the "average" preschool child. If advanced characteristics are present, intellectual giftedness at the kindergarten level is indicated. The purpose of the observational guide is not to determine the degree of advancement. Its purpose is to determine if intellectual advancement is present.

The following outline notes information needed before the instrument is used. Included are the purposes of the observational guide, factors researchers have found influence observational judgement, instruction for use of the rating scale, and how to score and interpret the results.

A. Purposes of identification guide

1. Assist teacher in identification process by providing a systematically organized group of characteristics.

2. Obtain an estimation of child's advanced intellectual characteristics in three categories.

   a. General abilities.
   b. Task commitment.
   c. Creativity.

3. Assist in program development.

   a. Challenge child in area of advancement.
   b. Encourage development in other less-advanced areas.
   c. Provide for help in areas where child is behind or which seem to have been neglected.
   d. Encourage development of new interests.
   e. Help child accept himself and find place in peer group.

4. Assist parents in development of good home environment.

   a. Accept and appreciate child as individual at home and in other social situations.
   b. Provide support and guidance in all areas of development, especially in problem areas.

5. Establish a higher degree of credibility in determination of possible intellectual giftedness.

B. Factors which influence observational judgement.

1. Young age of child.

   a. Rapid and uneven growth and development in all areas.
   b. Limited vocabulary so child cannot verbalize adequately or give expression to total idea, observations, or conclusions.
   c. Small physical size and/or limited strength curtails or limits scope of interest, curiosity and independent investigation.
   d. Social behaviors misinterpreted, such as reason for fearfulness of new places, overly cautious toward new activities, bossy in group play, or more comfortable with adults than peers.

2. Environment of child.

   a. Immediate school environment may not provide opportunity to demonstrate skill or creativity.
   b. Cultural-experiential context in which child has developed will influence how certain characteristics are exhibited.
   c. Socioeconomic level of family may enhance or retard the development of expected characteristics.

3. Teacher bias.

   a. Younger or older than size and behavior indicates.
   b. Personality conflict or cooperative personality.
   c. Unattractive or attractive appearance.
   d. Obnoxious behavior or courteous and kind behavior.

C Instructions for scoring.

1. Use only for selected children believed to be intellectually gifted or advanced.

2. Observe child in required and self-chosen activities over a lengthy period of time, at least four to six weeks.

3. Use the following rating values.

   A = NEVER observed.
   B = OCCASIONALLY observed.
   C = FREQUENTLY observed.

4. Place check in appropriate column behind each characteristic that stands out when compared with the other children in group.

5. Tally scores.

   a. Record subtotals and weighted totals in appropriate column at end of each category using the following weighted scale.
      (1) Column A subtotal multiplied by 1 equals weighted total.
      (2) Column B subtotal multiplied by 2 equals weighted total.
      (3) Column C subtotal multiplied by 3 equals weighted total.
   b. Add weighted subtotals from each category to find total score for individual categories.
   c. Keep category totals separate. Each of the three sections represent a different type of behavior. These categories must be evaluated as they interact with each other.
   d. Record subtotals and weighted subtotals for each category on Observation Guide.

6. Reassess class and individuals when necessary as developmental pattern and circumstances indicate. 100% of gifted children will not be identified. Increased awareness and continuous evaluation will tend to identify a higher percentage of them.

APPENDIX C

Center Information Form

Name of Center _____ Date _____

Check as many of the following as apply to your program:

1. Type of facility
   a. Head Start. . . _____
   b. Parochial . . . _____
   c. Private . . . . _____
   d. Public . . . . _____

2. Type of care
   a. Child care - full day . . . . _____
   b. Nursery school - half day . . _____

3. Location of facility
   a. Inner city. . . _____
   b. Urban . . . . . _____
   c. Suburban. . . . _____
   d. Rural . . . . . _____

4. Group or class size
   a. Number of boys _____
   b. Number of girls _____

APPENDIX D

Teacher Opinion Form

1. What did you like about instrument? Why? _____

_____

_____

2. What did you dislike about instrument? Why? _____

_____

3. Generally, did it clarify or give insight into what constitutes intellectually advancement in preschoolers? How? Why? _____

_____

_____

4. Did instrument help you focus on discriminating characteristics and "look past" distracting characteristics? Explain._____

_____

5. Did you feel comfortable or uncomfortable using the instrument? Why? _____

_____

6. Were some characteristics harder to evaluate than others? Which ones? Why? _____

_____

7. Were some characteristics easier to evaluate than others? Which ones? Why? _____

_____

8. Do you feel access to this kind of instrument would help you identify or clarify needs of various students? How? _____

_____

9. Did use of instrument cause you to "see" children in your class differently than before? Why or how? _____

_____

APPENDIX E

Teacher Responses to Teacher
Opinion Form Items

Item 1. What did you like about instrument? Why?

- Forced me to think about each child in new perspectives.
- Interesting set of suppositions--caused me to look differently at students.
- Instrument was clear and easy to fill out.
- Simple.
- It seemed very thorough.
- It makes one aware of what might constitute a gifted child.
- It clarified some definite characteristics for me.
- Can give teachers added insight into areas of development a child may need.
- Questions produced thought. Curious about why 18 questions one area, eight questions in another.
- Now we are all talking about the same thing.

Item 2. What did you dislike about instrument? Why?

- Some of the wording.
- Couldn't remember what A-B-C stood for.
- Too many variables involved when comparing child to a certain group.
- Dislike having to mark "never."
- It was administered too early in the year. I feel I will know the children better late in the year. It is almost impossible to know this much about each child at this point of the year.
- I didn't enjoy filling it out for so many children.
- Many of the characteristics can be interpreted in many different ways.
- Takes a long time for each child if you try a large group.

Item 3. Generally, did it clarify or give insight into what constitutes intellectually advancement in a preschooler? How? Why?

- Yes, gave me chance to delve in thinking deeper about child's relationship between (self, peers and curriculum).*
- Clarify (what constitutes advancement by focusing on specific characteristics).
- Yes, by pointing out characteristics to observe.
- Yes, it gave me insight in the fact that many may be gifted in just certain areas. It helps you to look past who can count, name colors, etc.
- It might depending upon results.
- Yes, questions were examples of criteria.
- Yes, to some degree by pinpointing specific traits.
- Didn't take into account supernatural before.

Item 4. Did instrument help you focus on discriminating characteristics and "look past" distracting characteristics? Explain.

- Yes, I overlooked some behavior situations and speech problems.
- Yes, specific skills, attitudes spotlighted.
- Yes, by concentrating on positive characteristics.
- Yes, as behavior, development too often color our view of a child.
- Yes, because it was detailed and categorized.
- No. (Felt this particular class had no distracting characteristics.)
- One child has health problems--emotional upsets, but is very creative!

Item 5. Did you feel comfortable or uncomfortable using the instrument? Why?

- Felt more comfortable as I went along but certainly comfortable because I understood it better and felt I got a better insight into student.
- Comfortable, easy list.
- Uncomfortable, too many characteristics were too general for accurate observations.

*Words in parentheses are inserted to help clarify vague questionnaire comments. These clarifications are made on the basis of statements taken during follow up interviews.

- Fairly comfortable.
- I felt comfortable with the instrument, but not with my judgement in assessing the children.
- OK--although I don't feel that I know the more introspective child as well as I should, to do them justice.
- Difficulty in making judgement at this young age.
- Comfortable, however I also used it as a tool for insights into all the children, not only advanced.
- No problem about using it, just hard to get it done along with everything else.

Item 6. Were some characteristics harder to evaluate than others? Which ones? Why?

- Reading--we have not evaluated--they came with different moods and emotions each day. Emotions limit child's performance.
- Yes--(reading skills) not apparent in our setting.
- Yes, characteristics on God and death--not subjects often discussed at this age.
- Creativity is harder--need more time to know child for this.
- I had more trouble evaluating the general ability characteristics. Probably because I have not spent enough time individually in conversation with each child.
- Yes--we have no way of knowing at this point in a large group how many would react to many of the questions--choice of books, etc.
- Yes--some (creative) of the areas are subjective evaluations based on individual judgement.
- Yes--some characteristics can be related to other circumstances--older siblings--more attention given by parents.
- Religious one--death conversation.

Item 7. Were some characteristics easier to evaluate than others? Which ones? Why?

- Social and Task Commitments--depends how view the child--concrete evidence (completed task) easier.
- Yes, (social development is emphasized in class).
- Above average creativity characteristics are easily observed and comparisons to the group more concrete in our type of school program.

- Social--easier.
- Vocab skills--obvious emotional and social skills.
- Yes--obvious academic areas, verbal areas.
- Yes--either the child is capable of reading or not. The same with time concepts and number concepts.
- Intellectual abilities and task commitment were easier because public schools emphasize those.

Item 8. Do you feel access to this kind of instrument would help you identify or clarify needs of various students? How?

- If I was told how to use it, I could motivate those who might need motivation to accept their advancement.
- It could point out areas needing further development or reinforcement.
- It guided me in taking a look at certain aspects of the child which I would normally not even think about.
- Having the criteria list would help (to identify needs).
- Yes--high intellectual marking and low social would tell us they need attention in the social.
- Would like to do one category on whole class--wait then do another.

Item 9. Did use of instrument cause you to "see" children in your class differently than before? Why? How?

- Yes--think differently about children when use instrument.
- Yes--new insights.
- It helped point out characteristics to look at that otherwise might have gone unobserved.
- Yes--quiet children's traits may not show as readily.
- The narrative of your guide reminded me to look past the behavior problems and other problems.
- Some of the characteristics which might be negative I see in a positive light now.
- Yes--was made alert to certain characteristics after (use).
- Attach more qualities to them beyond group behavioral ones.

APPENDIX F

Teacher Responses to Questions Presented in Follow Up Interview

Item 1. Did items clarify for the teacher what constituted intellectual advancement in preschoolers? Why?

- Teachers were not always consciously aware of many of the characteristics. The items caused them to focus on a behavior and consciously evaluate it. Example: Why does child appear to be a tattletale?
- Developed awareness of some behaviors which could have other interpretations.
- Looked at behavior of average and below average children differently.
- Forced to focus on those characteristics which were harder to identify or evaluate.
- Took second look at behaviors labeled stubborn, bossy, and listened closer to silly answers.
- I had no idea what were gifted characteristics.
- Caused me to view the trouble maker differently.
- Found creativity very difficult if not impossible to evaluate.
- Didn't realize advanced characteristics could already be seen in a 2½ year old.

Item 2. Did teacher feel instrument helped to focus attention on the advanced intellectual characteristics instead of on other distracting characteristics? How?

- Caused me to look closer at the loner, the troublesome and bossy child.
- Felt at ease with the characteristics under creativity even using at the lower socio-economic level.
- Helped (observer) to look at "Why" child seemed to be viewed as bright or gifted in one area and not in another area.
- Looked at trouble maker in different light.
- Didn't identify any distracting characteristics because all our children come from the upper middle class socioeconomic level.

- Gave form and system to process.
- Provided consistency to whole procedure.
- It made it easier to look at individual characteristics as related to others in same area as well as to those of other areas.

Item 3. Did teacher feel the instrument identified the intellectually advanced preschoolers in that class? Why?

- One teacher had child in her class which previously had been identified as intellectually gifted. She felt she had been able to identify many of the listed characteristics in this child. Felt very strongly instrument should be used for only selected students.
- After using the instrument one teacher was able to approach parents to point out intellectually advanced characteristics exhibited by their child. She thought instrument did identify the intellectually advanced child.
- Presently class does not have any gifted, but I feel instrument would assist in the identification process.
- Several felt instrument did identify child thought to be gifted, but at the same time felt uneasy and frustrated marking under Column A stating the characteristic was never observed. I felt guilty marking so many nevers.
- It will identify not only the gifted, but also clarify developmental levels for the average and below average as related to average expectations.

Item 4. If this instrument was available, how would it be used by the teacher?

- It would help to determine developmental level of child and assist in the development of a beneficial curriculum.
- Several teachers said they would use it as a basis for discussion with a parent who thought their child was gifted.
- It would help to determine curriculum needs of selected students.
- One teacher wasn't sure how to use the instrument. Probably would use to clarify developmental level in relation to curriculum development.